REMARKS

Reconsideration is respectfully requested.

Entry of the above amendments is courteously requested in order to place all claims in this application in allowable condition and/or to place the non-allowed claims in better condition for consideration on appeal.

Claims 1 through 5, 7 through 27, and 29 through 38 remain in this application. Claims 6 and 28 have been cancelled. No claims have been withdrawn or added.

Paragraph 2 of the Office Action

It is noted that paragraph 2 of the Office Action refers to the filing of October 31, 2005 as a "Continued Prosecution Application". To the extent that there is a difference, it is noted that the filing of October 31, 2005 was a Request for Continued Examination.

Paragraphs 3 through 5 of the Office Action

Claims 1 through 5, 7 through 27 and 29 through 38 have been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Lambrecht in view of McIntosh.

Claims 16 through 20, 24 through 27, and 35 through 38 have been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Eatwell in view of McIntosh.

Claim 1 requires "a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to a standard headphone compatible audio output connection to reduce headphone noise". Claim 8 requires "wherein the mixed signal is applied to a standard headphone compatible audio output connection to reduce the ambient noise in the headphones". Claim 13 requires "mixing the noise cancellation signal with an audio signal for provision to a standard

headphone compatible audio output connection to reduce headpbone noise". Claim 16 requires "a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to a standard headset compatible audio output connection to reduce headphone noise". Claim 24 requires "a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to an audio output connection for a standard headset".

The initial rejection of the claims in the Office Action concedes that:

> Lambrecht fails to teach that a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to a standard headphone compatible audio output connection to reduce headphone noise and does not clearly teach a built-in microphone for detecting ambient noise and Lambrecht indicates that the computer with a speaker and microphone for the noise cancellation;

and it is then contended that:

> ... it is well known (official notices is taken) in the art that a built-in microphone for detecting ambient noise in the computer.
>
> Therefore, it would obvious to one of ordinary skill in the art at the time invention was made that Lambrecht would have *a* built-in microphone for detecting ambient noise in the computer for perform well in noisy environments and friendly uses.

It is also alleged that:

> ... Mclntosh teach a digital signal processor (see fig. 4, (DSP)) for mixing the noise cancellation signal with an audio signal (AUDIO L, R) provided from a desired source for provision to a standard headphone (12) compatible audio output connection to reduce headphone noise (see col. 3 line 24-col. 4 line 55).

and asserted that:

> Therefore, it would obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of Mclntosh into Lambrecht to provide not only active control of the analog cancellation loop gain to maximize the effectiveness of the broadband analog cancellation but also uses the adaptive feedback filter/algorithm to

> substantially reduce at least the loudest tonal noises penetrating the earcup (such tonal noises being engine and propeller noises, and harmonic vibrations of fuselage components).

However, it is submitted that one of ordinary skill in the art, considering the disclosure of the McIntosh patent would not be led to modify the Lambrecht system as alleged in the rejection of the Office Action. .In particular, it is submitted that the McIntosh patent discusses a system in which the DSP receives an "analog error signal" from a microphone positioned in the earcup of the headphones. See, e.g., the McIntosh patent at col. 2, lines 33 through 51 (emphasis added):

> The invention provides an active noise cancellation aircraft headset system which includes a headset of the type having a headband and a pair of earcups mounted to the headband. A speaker is mounted within each of the earcup for receiving and acoustically transducing a composite noise cancellation signal, and a microphone is also mounted within each earcup for transducing acoustic pressure within the earcup to a corresponding analog error signal. An analog filter receives the analog error signal and inverts it to generate an analog broadband noise cancellation signal. The analog error signal is also provided to an analog to digital converter, which receives the analog microphone error signal and converts it to a digital error signal. A DSP takes the digital error signal and, using an adaptive digital feedback filter, generates a digital tonal noise cancellation signal. A digital to analog converter then converts the digital tonal noise cancellation signal to an analog tonal noise cancellation signal so that it can be combined with the analog broadband noise cancellation signal.

Thus, one of ordinary skill in the art considering the McIntosh patent understands that the noise cancellation signal is derived from the microphone located in the earcup, and thus is derived from sounds that exist in the interior of the earcup (such as the sounds that pass through the earcup). The placement of the microphone in the earcup is further discussed at col. 3, lines 31 through 47 (emphasis added):

> FIG. 3 depicts the essential elements of a headset system of the invention, providing both analog broadband noise cancellation and digital adaptive tonal noise cancellation. A headset 10 includes an earcup 12 carrying a conventional circumaural cushion 14, a conventional speaker element 16 and an error microphone 18 mounted within the earcup 12. External sounds penetrating the earcup 12 are

> detected by the error microphone 18, which transduces the sounds (i.e., the acoustic pressure) to a corresponding analog error signal. The error signal is provided to a conventional (nonadaptive) compensation filter H_{comp}, which receives the analog error signal and inverts it to generate an analog broadband noise cancellation signal. This cancellation signal is amplified by a variable gain amplifier 22, and the amplified analog cancellation signal is then provided to summing amplifier 24, the output of which drives the speaker 16 to cancel external noise which has penetrated the earcup 12.

The McIntosh patent states that the placement of the microphone in the earcup permits the noise reduction system to address the noise that actually penetrates the earcup (rather than compensating sounds that do not enter the earcup), as stated at col. 3, lines 57 through 59 (emphasis added):

> The analog error signal from the microphone is also provided to a DSP through a suitable A/D converter. The DSP utilizes an adaptive feedback filter to generate a digital tonal noise cancellation signal which is converted by a suitable D/A converter to an analog tonal noise cancellation signal. The tonal noise cancellation signal is then provided to the summing amplifier 24, where it is combined with the broadband analog cancellation signal to form a composite cancellation signal. The composite cancellation signal is used to drive the speaker 16 to at least partially cancel aircraft noise which has penetrated the earcup 12.

Further, it is noted that the placement of the microphone in the earcup of the McIntosh headphones is needed for the "active control of the analog cancellation loop gain". Thus, assuming for the sake of argument that one of ordinary skill in the art is actually motivated as set forth as stated in the rejection of the Office Action to combine the McIntosh system with the Lambrecht to obtain "active control of the analog cancellation loop gain", then one would also be motivated to position the microphone *in* the earcup, rather than positioning the microphone anywhere else to simply detect "ambient noise". Detecting "ambient noise" outside of the earcups would not provide the "active control" function. Thus, utilizing the built-in microphone in a portable computer, as is alleged in the rejection, would not provide the benefits set forth in the Office Action.

Thus, despite the allegation in the rejection that it would have been obvious to utilize the built-in microphone of the computer, the McIntosh patent clearly leads one of ordinary skill in the art to positioning the microphone in an earcup of the headphones, and leads one away from any use of the built-in microphone.

Further, since the McIntosh system clearly requires headphones that employ a microphone as well as speakers, and therefore it is submitted that one of ordinary skill in the art, considering the McIntosh teaching, would not understand that the McIntosh system would employ "a standard headphone compatible audio output connection". It is submitted that one of ordinary skill in the art would expect that any system utilizing the McIntosh system would employ specializes headphones that not only include a microphone, but a microphone positioned *in* the earcup. It is therefore submitted that the discussion in the McIntosh patent does not describe a standard headphone compatible audio output connection, as the McIntosh system clearly contemplates a headphone connection that includes both "input" and "output", which is not provided by a standard headphone compatible audio output connection. One of ordinary skill in the art, considering the disclosure of McIntosh patent, would not consider a connection that provides bidirectional communication to be a standard audio output connection.

Further, claim 1 requires "a built-in microphone for detecting ambient noise". Claim 8 requires "detecting the ambient noise via a microphone built-in to the mobile computer system". Claim 13 requires "detecting environmental background noise via a microphone built-in to the computer". Claim 16 requires "a microphone built into the housing for detecting noise ambient to the housing". Claim 24 requires "a microphone integrated into the mobile computer for detecting ambient noise".

With respect to the rejection based upon the allegedly obvious

combination of the Eatwell and McIntosh patents, it is submitted that the above comments regarding the combination of Lambrecht and McIntosh also apply to this combination. It is alleged in the rejection of the Office Action that:

> Eatwell fails to disclose a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to a standard headset compatible audio output connection to reduce headphone noise. However, McIntosh discloses a digital signal processor (see fig. 4, (DSP)) for mixing the noise cancellation signal with an audio signal (such as (AUDIO, L AND R)) provided from a desired source for provision to a standard headset compatible audio output connection to reduce headphone noise (see col. 3 line 23-col. 4 line 55).
>
> Therefore, it would obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of McIntosh into Lambrecht to provide not only active control of the analog cancellation loop gain to maximize the effectiveness of the broadband analog cancellation but also uses the adaptive feedback filter/algorithm to substantially reduce at least the loudest tonal noises penetrating the earcup (such tonal noises being engine and propeller noises, and harmonic vibrations of fuselage components).

As noted above, the DSP of the McIntosh patent is strongly tied to the provision of a signal from the microphone in the earcup of the headphones, especially to provide the "benefits" that are claimed in the rejection to motivate the combination. As set forth above in the noted portions of the McIntosh patent, the "active control of the analog cancellation loop gain" cited in the rejection of the Office Action need to have this signal corresponding not to "ambient noise", but to the actual sound being produced from the speaker in the headphone. Therefore, the microphone located in the computer of Eatwell would not be able to provide the benefits set forth by McIntosh from the DSP, and would require the direct feedback provided by a microphone located in the same earcup as the speaker reproducing the altered sound.

Again, since the McIntosh DSP system requires a microphone proximate in the earcup to the speaker of the headphone, it is submitted that

"a standard headphone compatible audio output connection" is not disclosed to one of ordinary skill in the art.

Therefore the cited patents, and especially the allegedly obvious combination of Lambrecht, Eatwell and McIntosh set forth in the rejection of the Office Action, would not lead one skilled in the art to the applicant's invention as required by claims 1, 8, 13, 16, and 24, and therefore are submitted to be in condition for allowance.

Withdrawal of the §103(a) rejections of claims 1 through 5, 7 through 27, and 29 through 38 is therefore respectfully requested.

CONCLUSION

In light of the foregoing amendments and remarks, early reconsideration and allowance of this application are most courteously solicited.

Respectfully submitted,

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